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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/050,517 | 01/18/2002 | Andrea Manganini | Q68141 | 7765 |
| 23373 7590 03/06/2007 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037 | | | EXAMINER SEFCHECK, GREGORY B | |
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| SHORTENED STATUTORY PERIOD OF RESPONSE | | MAIL DATE | DELIVERY MODE | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | | |
|------------------------------|---------------------------------|----------------------------------|--|
| Office Action Summary | Application No. 10/050,517 | Applicant(s) MANGANINI ET AL. | |
| | Examiner Gregory B. Sefcheck | Art Unit 2616 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/11/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 4, 8 and 13-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4, 8 and 13-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

- Applicant's Request for Continued Examination filed 12/11/2006 is acknowledged.
- Claims 1 and 13 have been amended.
- Claim 10 has been cancelled.
- The previous objection to claim 13 is withdrawn in light of the present amendment.
- The previous rejection of claim 10 under 35 USC 101 is moot in light of the present amendments.
- Claims 2, 3, 5-7, 9, 11 and 12 have been previously cancelled.
- Claims 1, 4, 8, and 13-16 are pending.

Claim Objections

1. Claims 14 and 15 are objected to because of the following informalities:
Claims 14 and 15 include "adapted to" language which suggests or makes optional but does not require the particular steps to be performed. Subsequently, the claims raise a question as to the limiting effect of the language. Please see MPEP 2111.04. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 8, and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over de Boer et al. (US006616350B1), hereafter Boer, in view of Takeguchi (US006735171B2).

- In regards to Claims 1, 13, and 16,

Boer discloses a method and apparatus (network element) for managing multiple simultaneous impairments in a 4 fiber SONET ring topology through use of one or more protection lines (Abstract; Fig. 1; Col. 13, lines 4-16; claim 1,13 – a method and network element for managing multiple requests of span and ring protections telecommunication network with a 4 fiber ring topology protected by a traffic protection mechanism; claim 1,13 – receiving signals arranged as frames of bytes that comprise a first pair of event signalling bytes).

Boer discloses monitoring transmission lines for impairments that indicate loss of data, such as Loss of Signal, Loss of Pointer, Line Alarm and Path Alarm, which are carried in the SONET overhead. Based upon this monitoring, the impairment can be determined as a fiber, node or link failure. K-byte signaling can be used to signal that such an impairment has occurred so that a protection

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switch, span or ring type, can be performed (Col. 10-11, lines 19-36).

Boer discloses a first pair of k-bytes for requesting either a ring or span switch (Col. 11, lines 17-37; claim 1,13 - the first pair of event signalling bytes being used for requesting ring protection of at least one type).

Boer discloses performing both a span and ring switch on the basis of a priority (type) scheme of the working lines within a ring (Col. 13, lines 4-17).

Boer also discloses that a third k-byte can be used for requesting the switches (Col. 11, lines 37-42). However, Boer does not explicitly disclose a full additional pair of bytes for requesting two different types of span switches at the same time as requesting a ring switch, in which the additional pair of bytes are not yet reserved for other purposes.

Takeguchi discloses an SDH transmission system. Takeguchi discloses increasing the functionality of line switching control by utilizing unused bytes of the overhead (Col. 6-8, lines 1-27; claim 16 - additional pair of bytes are not yet reserved for other purposes). Furthermore, though the disclosure of Boer utilizes examples of span and ring protection switches using only one protection line, Boer does disclose that a plurality of protection lines may service a group of working transmission lines (Col. 3, lines 35-39). Implementation of the method and network element using a plurality of protection lines would enable multiple span protections of different priority working lines to be performed concurrently (claim 1,13 – signals includes at least one additional pair of event signalling bytes being used for requesting span protection of at least two different types at

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the same time as request for ring protection).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a full two pair of signaling bytes for requesting span protection of at least two different types at the same time as requesting ring protection, as shown by Takeguchi and Boer. This would extend the principle of three k-bytes disclosed in Boer to provide the signaling capacity necessary to implement a ring switch at the same time as multiple span switches over a plurality of protection lines.

- In regards to Claim 8,

Boer discloses a method and apparatus for managing multiple simultaneous impairments in a 4 fiber SONET ring topology through use of one or more protection lines that covers all limitations of the parent claims.

Boer discloses a priority scheme in which the priority of working lines are evaluated when a protecting-switching failure occurs such that the protection line(s) are used to service highest priority traffic (Col. 5, lines 27-62; Col. 10-11, lines 29-8; claim 8 – network includes at least one path protected by the traffic protection mechanism; claim 8 – processing the first pair and additional pair of bytes and evaluating whether the at least one path can be protected taking into account the processing bytes).

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- In regards to Claims 14 and 15,

Boer discloses the protection switching mechanisms of the method shown above to be implemented by software executed by a processor (Col. 8, lines 60-63; claim 14,15 – computer implemented product/medium to perform steps of method according to claims 1, 4, or 8 when run on a computer).

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boer and Takeguchi as applied to claim 1 above, and further in view of Falkenstein et al. (US007016379B2), hereafter Falkenstein.

- In regards to Claim 4,

Boer discloses a method and apparatus for managing multiple simultaneous impairments in a 4 fiber SONET ring topology through use of one or more protection lines that covers all limitations of the parent claims.

Boer does not explicitly disclose a transoceanic optical network.

Falkenstein discloses 4 fiber ring topology protection switching in a transoceanic optical network (Col. 8, line 18; claim 4 - telecommunications network is a transoceanic optical network comprising nodes connected through fiber spans having at least four fibers).

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the protection switching method of Boer on a transoceanic network, as taught by Falkenstein, thereby ensuring high priority data is resilient to faults when communicated across the ocean.

Response to Arguments

5. Applicant's arguments filed 12/11/2007 have been fully considered but they are not persuasive.

- In the Remarks on pg. 5 of the Amendment, Applicant contends that Takeguchi does not disclose that unused bytes of overhead are utilized to increase functionality of line switching control but, rather, teaches setting information stored in undefined portions of an overhead or predefined byte to enhance reliability in transferring the information. Applicant contends that this is different from providing additional bytes for indicating requests of two different span protections at the same time as a ring protection.
- The Examiner respectfully disagrees. Firstly, Takeguchi discloses that the setting information that is to be transferred is setting information for line switching control in the case of a failure (Col. 5, lines 54-64). Further, the setting information is disclosed to be transferred in an unused portion of a predefined byte of the section (Col. 6, lines 5-9). Therefore, the correlation of K byte signaling in de Boer and setting information in Takeguchi used in the rejection is proper. Secondly, as shown in the above rejections, de Boer discloses simultaneously requesting multiple protections,

including both a ring protection and a span protection, by utilizing a pair of K bytes as well as an extension third K byte for protection signaling. The disclosure of Takeguchi discussed above is relied upon to show that unused portions of the section (span) overhead, in addition to the 3 K bytes in de Boer, may be used to request further protections.

Therefore, the *combination* (emphasis added) of de Boer and Takeguchi teaches at least 2 pairs of bytes for signaling multiple, different span protections simultaneously with a ring protection, where the protections made are based upon the priorities (types) assigned to the lines in need of protection.

- In the Remarks on pg. 6 of the Amendment, Applicant contends that neither reference, either alone or in combination, teaches or suggests an additional pair of bytes.
- The Examiner respectfully disagrees. As shown above, de Boer discloses an additional K byte for protection signaling while Takeguchi discloses using at least an unused byte for setting information transfer. Therefore, the combination of de Boer and Takeguchi discloses *at least* (emphasis added) 4 bytes (2 pairs) for protection signaling.

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- In the Remarks on pg. 6 of the Amendment, Applicant contends that the combination of de Boer and Takeguchi is improper because de Boer relates to networks in a ring topology while Takeguchi does not disclose a network in a ring topology.
- The Examiner respectfully disagrees. Takeguchi discloses line switching control in an SDH network, which, like a SONET network, is known to be typically arranged in a ring topology.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory B. Sefcheck whose telephone number is 571-272-3098. The examiner can normally be reached on Monday-Friday, 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GBS *GBS*
2-22-2007

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